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THE UNITED STATES IN SOVIET ECONOMIC GROWTH

INDUSTRIAL PRODUCTION IN THE USSR

October 1958

By

STATINTL [redacted]

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5 October 1962

INDUSTRIAL PRODUCTION IN THE USSR [redacted] STATINTL

I. Introduction

Industry is the highest priority producing sector in the Soviet economy. Indeed, industrial production is not only a means to other ends as in any economy but is an end in itself. The continuing rapid growth of industry is a political requirement in the Soviet Union exceeded in importance only by military preparedness. The best trained and highest quality manpower as well as a large and rapidly growing share of investment are annually directed into industry and in particular into heavy industry whose principal end products are (1) armaments, and (2) machinery and construction materials for more investment and more industrial capacity. Under these conditions it is not surprising that industrial capacity and production have grown rapidly.

The purpose of this paper is twofold: (1) to present an independently constructed index of civilian (non-armaments) industrial production for the USSR for the period 1950 to 1961, and (2) to consider possible trends and recent developments in over-all industrial production, including armaments. In an effort to make the civilian index as representative of postwar production as possible, the sample of physical products, whose production is regularly announced by the Soviet government, has been supplemented by estimated production series for a number of new and rapidly growing products. The most important of these are electronics production, civil aircraft, and merchant ships.

A number of other possibly fast growing products are omitted for lack of data. On this account the calculated index may still somewhat understate actual growth of civilian industrial production. A more detailed description and evaluation of the index can be found in the appendix to the paper.

II. Soviet Industrial Production from 1950 to 1961

A. Recent Trends in Civilian Industrial Production

Civilian industrial production in the USSR has grown rapidly in the period 1950 to 1961, but the growth has slowed somewhat since 1955 and especially in 1960 and 1961. According to the calculated index the average annual growth from 1950 to 1955 was 10.1 percent, from 1955 to 1961, 8.7 percent and for 1960 and 1961, 6.6 percent. The index and its components are shown in Table 1 and Chart 1.

Both industrial materials and consumers non-durable goods show fairly rapid rates of growth during the 1950's followed by a moderate slowing down in 1960 and 1961. For industrial materials the average annual growth was 10.0 percent from 1950 to 1959 and 6.0 percent from 1959 to 1961. The growth rates for consumer non-durable goods for the same periods are 8.8 percent and 4.6 percent. In civilian machinery production the retardation starts abruptly in 1958 and is more pronounced than in the other two components. Civilian machinery maintained an average rate of growth of 16.4 percent from 1952 to 1957, but since 1957, only 8.7 percent.

B. Over-all Industrial Production

The addition of arms production to civilian industrial production would surely modify the calculated trends. In the absence of armaments production data the degree of slowdown in over-all Soviet industrial production is uncertain, but we do not believe its inclusion would eliminate the slowdown. The Soviet official index, shown in Table 1 and Chart 1, which presumably includes armaments production, shows a slight slowdown in 1960 and 1961.

The growth of armaments cannot be estimated with confidence, but some speculations are in order. The general shape of the trend in armaments and the key dates in Soviet military procurement policy can be readily guessed at. It is of special interest that the armaments production trend appears to have different turning points than those in the trend of civilian production. The useful statistics for this purpose are civilian machinery production, excluding electronics, and metals production [redacted]. These are shown on Chart 2. 1/

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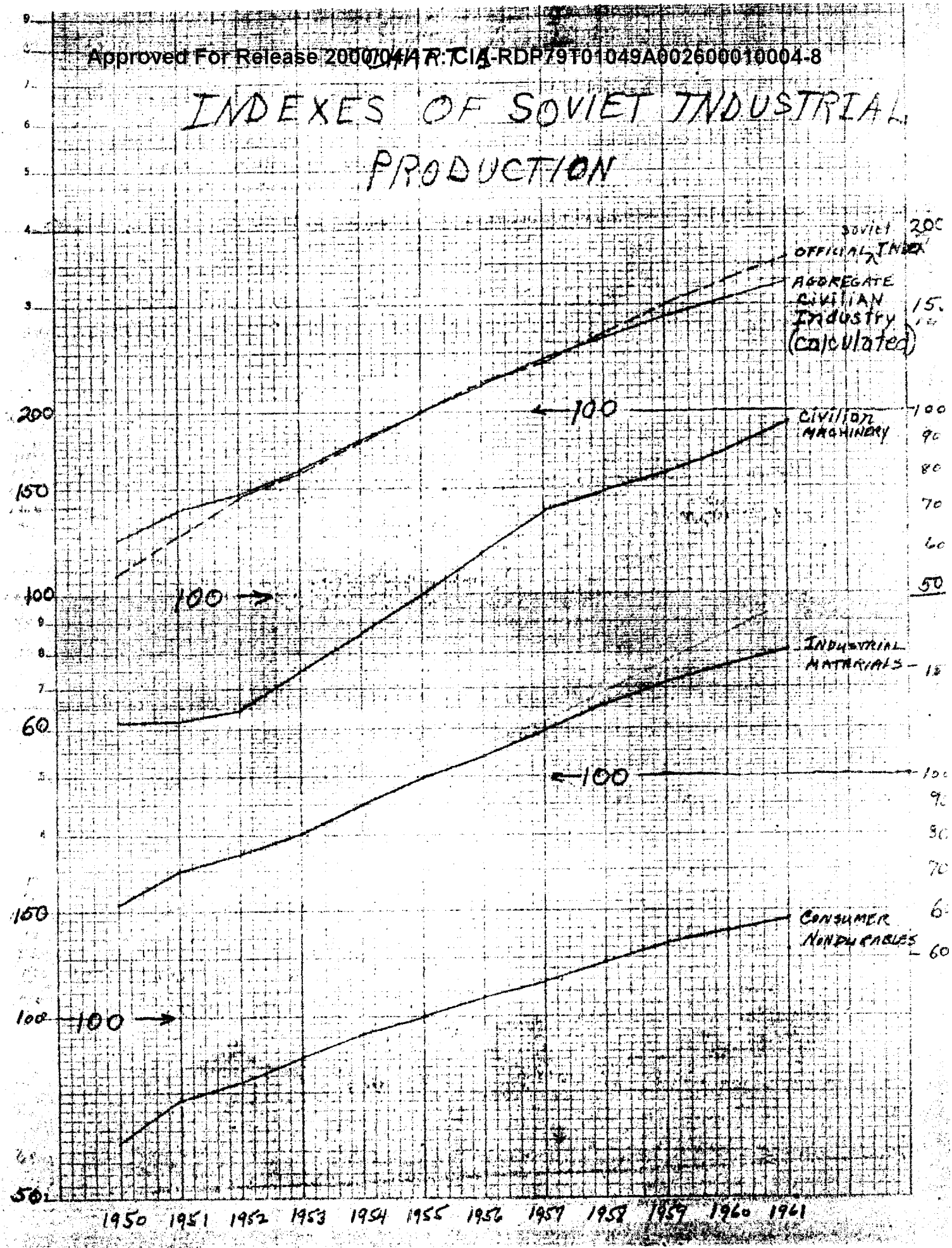
The impact of armaments production is clearly visible in the Korean War period. While metals production rose steadily through 1950, 1951, and 1952, civilian machinery stayed constant. Civilian machinery resumed a rapid growth in 1953 which continued until 1957. Following 1957, civilian machinery grew even more slowly than metals production. By analogy with the Korean War period, the evidence since 1957 suggests an acceleration of arms production. The general shape of an arms production index can be described as follows: a rapid growth

1/ See Appendix C.

INDEXES OF SOVIET INDUSTRIAL PRODUCTION



from 1950 through 1952; a flat or slowly growing trend through 1957; acceleration after 1957. We cannot say what quantities to substitute for the words rapid, slow, and accelerate but any of several reasonable guesses have the same modifying effect on civilian production trends -- that is, to increase the growth trend in 1950-52, to slow it down in 1953-1957, and perhaps to increase it since 1957. Hence retardation in industrial growth may have occurred after 1952 and again after 1959. An illustrative trend in over-all industrial production thus might be: 1950-1952, an annual average growth of 11 percent; 1952-1959, 9-9 1/2 percent; and 1959-1961, 7-8 percent. 2/ In this view 1950-1952 represented a continuation of the postwar recovery surge and the recent slowing down occurred primarily in 1960 and 1961.

C. Possible Reasons for the Recent Retardation in Industrial Growth

Two factors stand out as possible causes of the recent retardation: first, the reduction of the scheduled workweek from ~~57~~ 47 to 41 hours in the period 1958-60, and the trend of labor supply generally; second, the slowing down of investment as a result of an increase of military production. The trend of man-hours

2/ For the over-all index to be raised from ~~6.7~~ 6.6 percent annually to 8 percent in 1960 and 1961 would require a non-electronics armaments growth of 14 percent annually. To raise it to 9 percent, and eliminate retardation entirely would require armaments growth of 20 percent annually. The latter figure seems unreasonably high. It would surely have produced a greater effect on the rest of the economy than we observe.

worked in industry is shown on Chart 2 along with investment in industry.3/ The trend in industrial investment shows only a slight slowing down, mainly in 1961. It appears that the increase in arms production has come chiefly at the expense of investment in sectors other than industry. Shortfalls in industrial investment in 1960 may have had some retarding effect on production in 1961. Investment in 1961 would have its effect mainly in 1962.

The trend in man-hours, in contrast, shows a marked flattening out after 1957, which is, of course, closely related to the progressive introduction of the short week from 1957 through 1960. The flattening of growth of man-hours worked surely has had some retarding effect on output. Very possibly, however, this effect was postponed until 1960 and 1961 as a result of the scheduling policy in the introduction of the short workweek. In 1958 and 1959 each enterprise was instructed to introduce the short week if it could do so without increasing its labor force and without reducing output below plan. Those enterprises that did introduce the shorter week in 1958-59 presumably had at hand known labor-saving opportunities. Taking advantage of these opportunities in a given year means not having them in later years. In 1960 all industrial enterprises shifted to the short workweek, ready or not. The Soviet press testifies to the fact that many of these enterprises were forced to hire more workers. The industrial statistics in Table 1 reveal at least one industry that

3/ See Appendix C.

CHART 2

FACTORS IN SOVIET INDUSTRIAL GROWTH

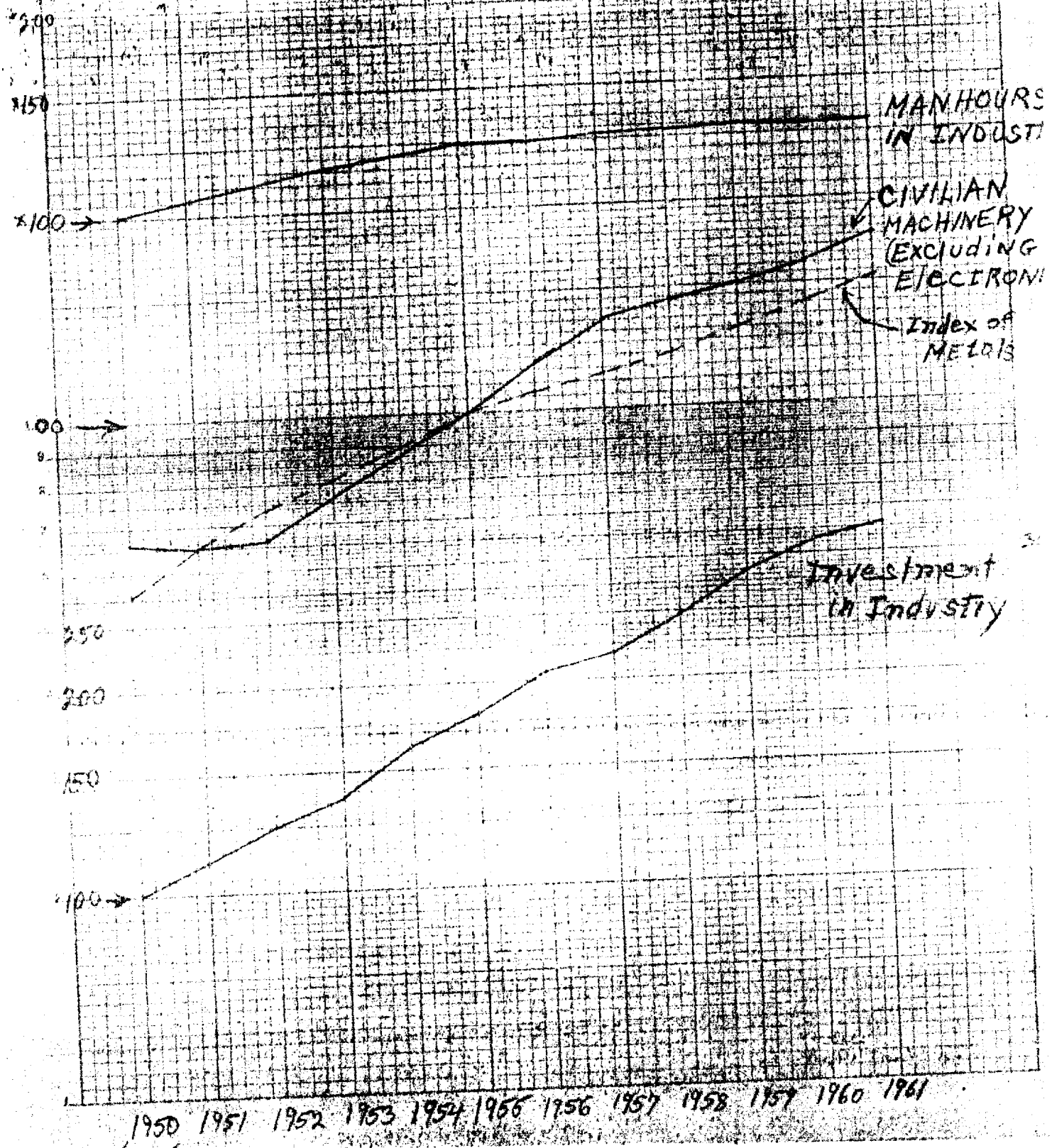


Table 1

Indexes of Soviet Industrial Production, 1950-61
(1955 = 100)

	1955 Value-Added Weights	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Calculated index													
Industrial materials	52.3	61.5	69.9	75.3	80.8	90.1	100.0	108.9	119.9	131.9	144.8	153.7	162.6
Electric power	3.3	54.0	61.5	70.4	79.4	88.8	100.0	112.7	123.5	138.6	155.7	172.0	192.4
Coal	9.3	66.9	72.5	77.2	81.6	88.4	100.0	109.8	118.6	127.2	130.5	132.8	132.4
Petroleum products & natural gas	2.4	53.3	59.5	66.5	74.4	83.8	100.0	118.9	139.5	160.6	182.7	208.3	234.8
Ferrous metals	6.0	59.1	68.0	75.9	83.2	90.7	100.0	107.1	113.8	122.0	133.1	144.2	156.2
Nonferrous metals	4.8	51.5	60.2	70.7	78.8	88.1	100.0	106.8	112.2	117.7	125.7	136.3	148.0
Forest products	14.2	75.7	85.8	85.9	86.2	96.8	100.0	103.1	109.6	116.0	124.7	119.1	115.5
Paper products	0.8	62.2	69.7	77.1	87.1	95.7	100.0	107.8	117.2	125.1	130.7	136.5	145.0
Construction materials	6.8	45.8	54.3	62.6	71.4	83.1	100.0	115.9	141.1	170.6	200.9	231.9	255.8
Chemicals	4.7	53.1	62.6	70.2	78.4	87.2	100.0	111.4	126.2	142.4	161.4	177.5	197.9
Civilian machinery	22.2	61.8	61.9	64.3	75.1	86.4	100.0	118.6	137.4	149.0	159.5	173.0	192.0
Machinery, excl. electronics	19.5	66.1	65.0	66.2	76.6	87.2	100.0	118.0	135.7	143.9	151.7	162.5	175.4
Electronics	2.7	31.2	40.4	50.5	65.1	80.7	100.0	122.9	149.5	185.3	214.7	247.7	308.0
Consumer nondurables goods	25.5	62.2	73.2	78.1	85.6	94.1	100.0	107.6	114.8	123.7	132.8	138.4	145.6
Soft goods	16.2	61.8	74.0	77.6	84.8	94.5	100.0	105.9	112.5	122.0	130.3	137.8	142.1
Processed food	9.3	63.0	72.0	78.9	87.0	93.2	100.0	110.7	118.6	126.5	137.2	139.5	150.1
Aggregate civilian industrial production	100.0	61.7	69.0	73.6	80.8	90.3	100.0	110.7	122.5	133.6	145.0	154.1	164.7
Official Soviet index of the gross value of industrial production		54	63	70	79	89	100	111	122	134	150	164	179

suffered a drop in output attributable to the reduced workweek. The timber industry, operating in distant and unattractive locations, has always had trouble maintaining its labor force in spite of premium wages. The introduction of the 41-hour week simply resulted in 7 1/2 percent drop in output of forest products from 1959 to 1961.

A third factor which may have had some retarding effect on civilian machinery production is the effort to introduce greater diversification in product lines. Introduction of new technology in industrial production processes has been a vital part of industrial growth in the Soviet Union. But final products have usually consisted of a limited number of standard models. Product differentiation and diversification have never been strong points of Soviet industry outside of high priority fields such as armaments. In this respect the emphasis of the seven year plan on new technology along with the bonuses for its introduction may have led some enterprise managers down unfamiliar and unproductive paths. Difficulties in designing and tooling up for a wider model range have been reported in agricultural equipment production especially, and it is possible that these difficulties are in part responsible for the decline in output of agricultural equipment from 1957 to 1959.

It seems likely that competition from military demand contributed to difficulties in the introduction of new types of civilian equipment as well as in other aspects of new technology for civilian purposes. In this connection

armaments should be thought of as including atomic energy activity and space programs. Space, and nuclear weapons and missiles, in this country as well as in the USSR, have introduced a quality aspect into the competition for resources that may be as important as the quantitative aspect. It is characteristic of recent trends in weapons systems and space programs that the research, development, and testing programs have become an increasingly large part of cost. More important, the resources required for these programs are specialized and scarce -- very high grade scientific, engineering, and technical manpower are required along with special alloys and chemicals, low tolerances, high performance, and in many cases handmade components. Each rocket test firing wipes out a gleaming and outrageously expensive package of hardware. The high grade resources are just those most needed for the Soviet plans for new technology (labor saving and capital saving) in both industry and agriculture.

III. A Comparison with Western Countries.

Table 2 compares industrial growth for the USSR, US, Japan, Federal Republic of Germany, France, and Italy.

The most startling numbers in Table 2 are those for postwar Japan. Its recent rate of growth not only far exceeds that of any European countries, but also that of the USSR from 1928 to 1937. In the rapid surge of the first two five-year plans Soviet civilian industry grew 11.2 percent annually according to Nutter 4/ and 10.6 percent according to Kaplan and Moorsteen. 5/ The growth

4/ The Growth of Industrial Production in the Soviet Union, G. Warren Nutter, Princeton University Press, 1962, p. 163.

5/ Indexes of Soviet Industrial Output, Norman M. Kaplan and Richard H. Moorsteen, Rand Corporation, 1960, p. 266.

Table 2

Average Annual Growth of Industrial Production

Percent

Period	USSR	US	Japan a/	Federal Republic of Germany b/	France b/	Italy b/
Prewar to 1961	5.9 c/	4.3 c/ 4.5 d/	5.3 c/	4.0 e/	4.0 e/	5.3 e/
1950-55	10.1	5.2	15.5	12.3	5.5	8.9
1955-61	8.7	2.1	18.2	6.6	7.0	9.0
1950-61	9.3	3.5	17.0	9.2	6.4	8.9

a. Japanese Statistical Yearbook, 1961 and Japanese Economic Statistics, no. 46, July 1962.
b. Source OEEC, Industrial Statistics, 1900-1959, and OECD, General Statistics, July 1962.
c. Initial year 1937.
d. Initial year 1940.
e. Initial year 1938.

of Soviet industry in the postwar period is about the same as that of Germany and Italy, greater than that of France, and considerably greater than that of the US.

Caution is desirable in drawing conclusions from short periods of growth, particularly in countries recovering from wartime destruction. Therefore, average annual growth since prewar is shown for each of the countries. For this purpose we have linked our calculated index for the USSR for 1950-1961 to the Kaplan-Moorsteen index of civilian output 6/ for 1937-1950.

In capability for making industry grow, the USSR must be given high marks.

6/ Ibid.

The USSR increased significantly further beyond its prewar industrial level than each of the other countries including Japan. Each of the countries except the US has had significant outside aid in its recovery effort, but the USSR's unrequited receipts from the European Satellites are smaller relative to its size than the foreign investment in the West European countries and Japan. 7/ Furthermore, West Germany, Italy, and Japan have not simultaneously borne a heavy defense burden while carrying on their postwar industrial growth. Finally, it should be noted that the US and France had a great deal of unemployed labor and plant capacity in the prewar base years.

The USSR growth rates in Table 2 represent civilian industrial production. Before drawing final conclusions about the international comparisons in the table we must consider the possible effect of armaments production on the USSR industrial growth rates.

There does not appear to be any better approach to military procurement than that developed by Professor Abram Bergson 8/ in his studies of Soviet national income. For the postwar period his procedure is essentially to arrive at military procurement as a residual by subtracting personnel pay and subsistence

7/ Since the end of World War II the USSR acquired reparations and war booty estimated at 10 billion dollars or a little more. See External Impact of Soviet Economic Power, Penelope Thunberg, paper contributed to J.E.C., Oct 1962. Total US government and direct private investment in the three Western countries and Japan from 1946-1961 is as follows in billions of dollars; France, 5.86; West Germany, 4.70; Italy, 3.83; Japan, 2.87. See US Agency for International Development US Foreign Assistance, 1949-1961, March 1962, and US Department of Commerce, Survey of Current Business. Since the Soviet economy during this period has been almost as big as the four other countries combined, the advantage in outside aid appears to rest with the Western countries and Japan.

8/ The Real National Income of Soviet Russia since 1928, Abram Bergson, Harvard University Press, 1961, p. 362 f.

from the announced defense budget. Uncertainties about number of men in service, their average pay, and prices paid for subsistence goods combine to make this a precarious operation. In addition, the announced defense budget is itself under suspicion. There are reasons for believing that activities such as military research, development, and testing, and perhaps even some part of armaments procurement are financed from other parts of the budget. These kinds of activities have certainly been growing rapidly since 1950 as defense weapons policy has shifted more and more to nuclear weapons and missile systems. 9/ While this increases the uncertainty, it suggests that Bergson's method leads to a conservative estimate of the growth of armaments.

Bergson explicitly estimates munitions procurement for 1940 to 1955, and the estimate can be extended back to 1937 to obtain an index of 415 for the period 1937 to 1955. 10/ This over-all growth is already greater than the estimated civilian production growth of 395 percent for the entire period 1937 to 1961. 11/

These calculations strongly suggest that the growth of armaments production from 1937 to 1961 exceeded the growth of civilian industrial production and that

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9/ In this matter we follow the argument in The Claim of the Soviet Military Establishment on Economic Resources, by [redacted] paper contributed to JEC, Oct 1962.

10/ Bergson's estimate of total procurement for 1937 is divided between munitions and other procurement by the 1940 ratio of the two. See Bergson, op.cit., (6, above p. 366.

11/ The Kaplan-Moorsteen index of 148 for 1937 to 1950 times the [redacted] index of 267 for 1950 to 1961.

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the latter is a minimum measure of Soviet industrial growth, 12/ and finally that if the Western European and Japanese postwar industrial recoveries have been impressive, that of the USSR has been no less so.

12/ A much smaller estimate of Soviet armaments production growth from 1937 to 1955 has been calculated by Professor G. Warren Nutter. See Nutter, op.cit., p. 322. This estimate appears to be a serious understatement. In the first place, we can be reasonably sure that the stock of armaments has grown faster than number of men in the armed forces over this period. The trend toward increasing firepower and equipment per man seems incontestable. The annual flow of armaments production would also increase faster than number of men, as long as there is no unusual contraction in the terminal period.

The number of men in the Soviet armed forces since 1937 was approximately as follows in millions:

1937	1950	1951	1952	1953	1954	1955
1.5-1.7	4.0	4.9	5.8	5.8	5.8	5.5

See Bergson, op.cit., p. 366.

An index of military manpower from 1937 to 1955 is considerably slower than Bergson's carefully calculated munitions index. The manpower index, Bergson's munition index, and Nutter's military products index are as follows:

	1937	1950	1955
Manpower	100	235-267	324-367
Bergson, munitions	100	266	415
Nutter, military products	100	103	288

Nutter's estimate, implying that armaments production per man fell drastically from 1937 to 1950 and from 1937 to 1955, seems to us implausible. Nutter's calculations involve dividing the defense budget in current rubles into pay and subsistence and procurement, and then dividing procurement into military products and "all other". From 1937 to 1950, according to Nutter's calculations military products rise (in current rubles) 57 percent and "all other" rises 13-fold, from 21 percent of all procurement to 69 percent. From 1950 to 1955 "all other" is held constant by Nutter and military products rise rapidly from 31 percent of all procurement to 54 percent. The rationale of these diverse shifts escapes us. Even though Nutter's trend of armaments for the whole period 1937 to 1955 is too low, the trend from 1950 to 1955 appears to us too high because of the exceptionally low index for 1950.

Industrial growth per se, however, is not a measure of industrial efficiency or of efficiency in promoting growth, much less of the effectiveness of an economic system. Where efficiency is in question the industrial performance must be related to cost -- cost in terms of the opportunities foregone in other parts of aspects of the economy and in terms of the cost of inputs into industry. We are already familiar with the cost to Russian consumers of the tremendous communist emphasis on industrial investment and growth. Careful comparative studies of relative efficiency of industrial growth as between various countries at various levels of technology have yet to be made. In this paper our concern is only with industrial growth from the point of view of its strategic implications for the US over the long run. 13/

IV. Comparison with Other Indexes of Soviet Industrial Production

Precisely what has been the postwar growth of Soviet industrial production is still a controversial matter in spite of substantial efforts by Western economists. The index of gross value of industrial production published by the

13/ As a matter of general interest we can calculate absolute increases of industry in the US and USSR. This calculation must consider the divergence in Western estimates of the relative size of US and USSR industry in any base year. Two main estimates have been published. The estimate of Nutter is that USSR industry equals 22 percent of that US in 1955. (3, above) See Nutter, op.cit., p. 238. Mr. Allen Dulles' estimate implies that USSR industry was 1/3 of US in 1955. If Dulles is correct, the Soviet absolute increase from 1955 to 1961 was 22 (US in 1955 equals 100) and the increase in US industry over the same period was 13. If Nutter is correct, the Soviet increase was 13 1/2 against the US increase of 13. Hearings before the Joint Economic Committee Congress of the United States, 13 November 1959, statement of Allen W. Dulles, p. 1.

USSR itself is not accepted by Western students as an accurate measure of industrial growth. The specific faults of the Soviet gross value index -- large and probably varying doublecounting, excessive pricing of new products, inclusion of non-productive activity such as capital repair -- have been exhaustively analyzed by many Western writers and need not be rehearsed here. 14/ But perhaps the most important consideration is the inflated reporting arising from the tremendous political pressure and financial incentives operating at all levels of the industrial hierarchy to make the gross value index for each plant, each region, each industry, and the economy as a whole rise in excess of plan.

Two comprehensive indexes of Soviet industrial growth have been constructed recently; one by Norman Kaplan and Richard Moorsteen to a terminal year of 1958, the other by G. Warren Nutter to 1955. For the prewar period these exhaustive and careful studies give results which are substantially in agreement for civilian industrial production and there is small likelihood that they could be much improved on with present data. For the postwar period, however, there are considerable doubts about the representativeness of the sample of products used in the two indexes.

The postwar period both in the US and the USSR has been one of rapid introduction of new products and of rapid development of new industries. In

14/ See Francis Seton in Soviet Studies, October 1960, pp. 128-130.

the successive revisions of the FRB index new industries and products have been intensively covered. In the list of commodities for which the Soviet government releases production data new products are usually among the missing. The omissions are principally but not entirely in the coverage of machinery and equipment production. Kaplan and Moorsteen commented on their postwar index in the following words: 15/

> "With the beginning of the 1950's, however, the level of technical sophistication in Soviet machinebuilding rose rapidly. The number of models proliferated and changed frequently. Thus, the machinery index is believed significantly to understate the actual increase in output from 1950 on."

The principal difference between the calculated index in this paper and other Western constructed indexes of Soviet industrial output is the inclusion in the former of estimates for new industries and products, especially electronics output, civil aircraft, and merchant ships. Military purchases of merchant ships and transport aircraft are excluded (for lack of data), but the production series for all other industries are comprehensive and include production destined for military as well as civilian use. Important examples of dual use are trucks, automobiles, tractors, and electronics. Since armaments production as such is omitted, however, the calculated index is referred to as an index of civilian industrial production.

15/ Kaplan-Moorsteen, op. cit., (8, above), p. 54.

Table 3

Three Indexes of Soviet Civilian Industrial Production, 1950-55
1950=100

		STATINTL [redacted]	Nutter	Kaplan-Moorsteen
I.	Industrial Materials	162.7	154	160.1
	Ferrous a/	169.2	170	167.9
	Nonferrous b/	194.0	187	--
	Fuel and electricity	161.6	158	--
	Electricity	185.2	--	186.6
	Fuels	156.0	--	167.2
	Chemicals (including paper)	183.8	144	--
	Chemicals c/	188.4	--	165.3
	Paper	160.7	--	--
	Construction materials (incl. wood)	151.5	150	--
	Construction materials	218.5	--	190.4
	Forest products	132.0	--	--
	Lumber, wood, and paper d/	133.4	--	139.1
II.	Civilian Machinery (excluding consumers durables)	147.7	--	--
	Machinery (excluding electronics, aircraft, and ships)	134.0	125	136.2
Indent	Transport equipment e/	108.7 e	106 e	118.2
Indent	Agricultural machinery f/	133.3 e	128 e	122.6
Indent	Miscellaneous machinery g/	162.4 e	154 e	169.3
	Added sectors			
	Electronics h/ (excl. radios and TV's)	295.4	--	--
	Civilian aircraft	326.9	--	--
	Civilian shipbuilding	192.6	--	--
III.	Consumer Goods	172.1	161	170.3
	Food and allied products	158.8	154	156.7
	Non-foods	179.1	--	178.9
	Textile and allied products	161.7	154	--
	Consumer durables (incl. radio and TV) i/	344.8	283	--
IV.	Total Civilian Industrial Production	162.1	146	158.1

a. Rolled steel products only in the STATINTL [redacted] index. Both Nutter and Kaplan-Moorsteen include iron ore, pig iron, steel ingots and castings, and rolled products.

b. Aluminum is included in the STATINTL [redacted] but not in the Nutter index.

c. Plastics and synthetic fiber in the STATINTL [redacted] index but not in the other two indexes. Nutter's sample of chemicals is considerably smaller than in the other two indexes.

d. For the STATINTL [redacted] index, lumber, wood and paper, which are part of the preceding category, are shown again in order to match the different classification of the Kaplan-Moorsteen index.

e. In all indexes includes automotive and railroad equipment.

f. In all indexes includes tractors and agricultural equipment.

g. Metallurgical, chemical, and petroleum refining equipment are omitted from the Nutter index. The disaggregation of the Kaplan-Moorsteen machinery index is taken from Prices and Production Of Machinery In The Soviet Union 1928-1958, Richard Moorsteen, Harvard University Press, Cambridge 1962, pp. 312-313, 382-391.

h. Excludes civilian radios and television sets in all indexes. Both Nutter and Kaplan-Moorsteen include a few electronic items in miscellaneous machinery -- chiefly telephones and switchboards.

i. Nutter omits television sets, a very important and fast growing product in the consumer durable category.

As in other Western indexes major sectors of industry are aggregated by weights that are intended to approximate value added.

A comparison of our index with the Nutter and Kaplan-Moorsteen indexes for the period 1950-1955 is presented in Table 3. The most important differences in coverage between the three indexes are noted in the footnotes to Table 3. The rate of growth of our index exceeds the rates for both the Nutter and Kaplan-Moorsteen indexes for the period 1950-1955. The comparison in Table 3 makes clear that the largest part of the difference between our index and the other two is accounted for by added coverage of ours. In particular the widest divergence is in the machinery sector, and this divergence stems primarily from the addition of electronics, civil aircraft, and shipbuilding to our index. 16/ The divergence of our index from Nutter's stems also in part from a significant difference in weights for the major sectors. Nutter's weight for machinery is 29.1 percent whereas our weight for machinery excluding electronics is 19.5 percent. Nutter does not reduce the machinery weight to exclude arms production and applies this large weight to his very slow-moving machinery index.

In spite of the broader coverage the present index grows only a little faster than the Kaplan-Moorsteen index in the 1950-1955 period. Industrial materials and consumer's goods account for about 80 percent of the weight in both indexes, while the principal divergence of component indexes for 1950-1955 is the machinery sector. Thus one would not expect the over-all civilian

16/ A comparison of the calculated civilian machinery index with the index of the equipment portion of investment announced by the Soviet Government is given in Appendix B.

indexes to diverge seriously. From 1955 to 1958 the two indexes diverge a little further. For 1958 the Kaplan-Moorsteen index is 128 percent of 1955 for an average annual growth of 8.6 percent; our index is 133.6 or 10.1 percent annually. The Kaplan-Moorsteen index is weighted by 1950 prices, the Greenslade-Wallace index by 1955 prices. One would expect early year prices to result in somewhat faster growth than later year prices, for an identical sample, because of the general tendency of relatively large price declines to be associated with fast-growing items. However, the broader coverage of faster growing items in the [redacted] index more than offsets this price factor. STATINTL

Finally, we take note of the over-all industrial index including armaments computed by Nutter. This index is compounded from Nutter's civilian index which is 146 percent in 1955 compared to 1950 and a military products index of 280. The over-all index is 158 or 9.6 percent per year. This may be very close to the mark as an over-all index of Soviet industrial production in this period. We believe, however, that Nutter's index seriously understates the growth of civilian industrial production and overstates the growth of armaments production, and hence gives a misleading picture of the structure of industrial growth in this period. 17/

V. Future Prospects for Industrial Growth in the USSR

The uncertainty about the rate of over-all industrial production for the past

17/ See footnote 11.

few years, makes forecasting all the more hazardous. Certain generalized conclusions, however, are suggested by the changes in trends over the past decade.

The loss in industrial growth attributable to the reduced workweek is presumably non-recurring. The Soviet government has promised an additional reduction of one hour on Saturdays in 1962, and gradual reduction to a 35-hour workweek beginning in 1964. Whether the one hour reduction has actually been carried out is not yet known. However, any further substantial reduction of the workweek would be a resounding victory of ideology over common sense. Assuming there is no further reduction we can anticipate a resumption of growth of manhours worked in industry, and on this account some reacceleration of growth as compared to 1960 and 1961. Bottleneck problems arising from excess inventory accumulation or specific commodity underfulfillments may have contributed to the slowdown in 1961. These are susceptible to vigorous ad hoc administrative corrective action and on this account also industrial growth in 1962 may be increased over 1961.

A reacceleration of growth over the longer run appears to be closely dependent on allocation decisions yet to be made. From 1952 to 1959 a 9 to 9 1/2 percent average annual growth rate was made possible by a progressive diversion of resources from military growth to civilian uses and especially to industrial investment. The number of men in the armed forces was substantially reduced and

armaments production grew more slowly than civilian machinery output. Since 1957 this diversion has probably ceased and may have been reversed. Diversions to the military since 1957 must have been particularly severe in those resources required for the application and development of new technology. This is especially important in the light of recent indications that Soviet industry, as it is now constituted, is not very adept at introducing new products, diversification, and quality improvements.

If the Soviet leadership chooses to continue its development and production of new weapons systems and space projects at about the same rate as in the last two or three years, it will have to settle for a more moderate pace of growth in industrial production than in the mid-fifties. Conversely a choice in favor of industrial growth will require a restraining of the growth in military and space expenditures. If, in addition, the leadership should feel compelled to recognize the accumulated demands of consumer sectors such as agriculture and housing, military and space demands will have to be even more severely restrained.

APPENDIX A

DESCRIPTION OF THE INDEXES

I. Sources of Data and Coverage of Sample

The basic sources of data are physical outputs and prices of commodities given in a succession of Soviet statistical handbooks. 18/ Limited space precludes a discussion of these data here. A description of these statistics can be found either in Kaplan and Moorsteen or in Nutter.

For the index calculated in this paper these basic statistics have been extended or disaggregated on the basis of a variety of information in Soviet economic and technical literature. The following outline summarizes the major additions or modifications to the announced physical production sample, which are included in the present calculated index and in most cases were not included in either the Nutter or Kaplan-Moorsteen indexes. 19/

a. Synthetic fibers and plastic resins. Production data for the former have been regularly reported, but for the latter have just recently been released by the Soviets. 20/

b. Non-ferrous metals, especially aluminum. Estimates were based on scattered references to percentage gains for individual metals in the Soviet literature. The series of aluminum production figures has been derived from official announcements of percentage increases in output.

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18. Especially Industry 1957, National Economy 1956, 58, 59, 60, and USSR in Figures, 1961.
19. A detailed report on the indexes in this paper is being prepared for publication elsewhere.
20. Plastics in metric tons was announced by Khrushchev in his 22nd party congress speech in October 1961.

Soviet publications yielded a source figure for 1937 to which percentage increases for the years 1950 and 1954, to 1958 can be linked. Estimates for the years 1951 to 1953 were interpolated. Indexes for the years after 1958 are assumed to be in line with the 1965 planned goal.

c. Disaggregation of machinery categories into models or types. Information in various technical journals has facilitated a few more detailed breakdowns; of tractors into individual models; of diesel and electric locomotives into models. Cars and trucks could not be separated into individual models, although information in technical literature suggests that disaggregation raises the index especially in the case of trucks.

d. Chemical equipment; an announced series in tons to 1954 is linked to an announced series in constant ruble values thereafter.

e. Civil aircraft; almost no production data are available but information concerning the inventory of various kinds of aircraft in Aeroflot at various times has been found. This is supported and supplemented by flight timetables from which inventories can also be deduced from estimated utilization rates. Production series are then estimated from the inventories. The estimates of annual production that result must be quite inaccurate. However, the estimated average rate of production in the second half of the 1950-61 period compared to that in the first half, a 7-fold increase, should be of the right order of magnitude. 21/

21 We know that Aeroflot, prior to 1955, used 2-engine piston aircraft almost exclusively, and that following 1956 it was in large part re-equipped with jet and turboprop aircraft, and that passenger kilometers flown increased 6 times from 1955 to 1961 and freight ton kilometers, 3 times.

f. Merchant ships -- no comprehensive production information is released, but ships are visible at sea. Not only is an accurate count feasible, but close estimates of size of weight and date of appearance are relatively simple to derive and are compiled by several of the navies and merchant marines of the world regarding each other's shipping. This information on Soviet merchant fleet has been collected by the US Maritime Commission. 22/ The production estimates here are deduced from this inventory information. Because of some uncertainty in individual periods of construction, annual figures may be imprecise, but production trend over several years are quite accurate.

g. Electronics; there can be little question that this industry producing components that are vital to many postwar weapons systems, especially to missile systems and space programs, has been growing rapidly in the Soviet Union from a small base immediately after the war. The Soviets claimed a more than threefold increase in gross value of output from 1950 to 1955. The estimates of value of output of electronics used here are based on announced Soviet number and value of electron tubes and semi-conductors, which in the US has been a fairly constant percent of final output. 23/ The value of Soviet final output is derived from the US ratio of value of shipments of final output to value of tubes and semi-conductors.

Adding imprecise series to an index does not necessarily improve it. With this in mind each new series has been examined for reasonableness in the light of related economic activities. Thus, the rapid growth in production of chemical equipment is consistent with the rapid growth in the

22. US Department of Commerce, Maritime Administration, Merchant Fleets of the World, published twice a year, 30 June and 30 December.

23. Electronics Industries Yearbook, 1962, Electronics Industries Association, Washington, D.C., 1962, p. 2 and p. 54.

production of chemicals. More importantly, in the cases of production of civil aircraft and electronics which significantly raise the entire index, the estimating prodecures or incompleteness of data tend strongly toward conservative estimates. In aircraft several recent models of helicopters are omitted for lack of data. Helicopters, including the world's largest helicopter, have appeared in considerable numbers in the USSR in the last few years and inclusion of these would surely increase the growth of the aircraft series. In 1960 and 1961 the estimated production of passenger aircraft (other than helicopters) declines sharply. New models of aircraft have been heralded in the Soviet literature already but have not been reported as yet in the Aeroflot inventory. Since it is likely that these models already are in production their omission understates production in 1960 and 1961 by an unknown amount.

In the case of electronics the use of a US relationship of value of tubes to value of final output probably understates the Soviet value of final product. In the US civilian radios and TV's, involving small tubes, are a much larger part of the total of electronics production than in the USSR, where military demand for increasingly complex components has been the dominant and the most rapidly growing portion. In combining electronics production with other elements in the machinebuilding sector, the faster-growing electronics has been given only its own value-added weight, assumed to be 1/2 of value of output. Thus, it is implicitly assumed that all machinery products missing from the sample grow at the same rate as non-electronics machinery which grows at a slower rate than electronics.

No armaments production data as such are included. Military purchases of merchant ships and transport aircraft are excluded (for lack of data), but the production series for all other industries are comprehensive and include production destined for military as well as civilian use. Important examples of dual use are trucks, automobiles, tractors, and electronics.

II. Weights

The index is intended to approximate a value-added weighted index such as that of the FRB index. Information for constructing value-added weights is available only for major sectors of industry (those shown in Table 1 24/). Commodities within major sectors are weighted by prices, retail prices (adjusted to exclude distribution charges) in the case of foods and consumer non-durables and factory wholesale prices for all other commodities. The approximate value-added weights for major sectors are calculated from wage data and estimated depreciation in each sector. Both prices and value-added weights are for the year 1955.

In the absence of value-added weights for individual commodities, an effort has been made to include different products at the highest stage of fabrication and to omit intermediate and lower stages. Thus, rolled steel products are included but steel ingots and pig iron are not. In the machinery sector the items in the sample are almost all final products. Intermediate components such as ball bearings or small electric motors are omitted.

Since armaments are excluded from the index, the value-added weight for machinery 25/ has been reduced to reflect only civilian products,

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24. See p. 6.
25. Value added for machinery consists of the wage bill and amortization in the Soviet category "machinebuilding and metalworking".

including electronics. Armaments are estimated to be approximately half of the final value of machinery output and their value added is assumed to be the same proportion of machinery value added. A further adjustment is needed to reflect the fact that most of electronics output is probably for military uses, for example, radar sets and missile guidance systems. We assume that half of electronics value of output, or .54 billion rubles, is value added in 1955, and of this one-third is civilian and two-thirds military.26/ The value added for civilian machinery, 4.03 billion rubles is reduced by .18 billion rubles to obtain value added for output of non-electronics civilian machinery, 3.85 billion rubles. Of the total non-armaments industrial value-added weight, civilian machinery excluding electronics accounts for 19.5 percent and electronics for 2.7 percent.

III. Deficiencies of the Index

The major deficiencies of the index are summarized below:

a. As indicated above the sample represents lines of production at one stage only. Hence, as compared to the NRB index it reflects changes in complexity and quality poorly. The much greater level of aggregation in the Soviet index than in the NRB index also results in a poorer reflection of quality changes. Our success in disaggregation of products was quite limited. The calculated series still probably understate Soviet industrial growth to the extent that there has been increasing quality and complexity within aggregate series.

b. The following product classes are not covered or are poorly covered:

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26. All ruble values in this report have been adjusted to new (1961) ruble levels by dividing by 10.

1). Many chemicals end products

2). Non-electonic instruments, metal forming equipment, food processing equipment, and many minor types of equipment

c. The very large category of fabricated metal products other than machinery is unrepresented. This category includes among other things, structural shapes, fencing, nails, screws, nuts and bolts, hand tools, and metal drums, cans, and other containers. This category accounts for 5 percent of value added in the US index and may be large in the Soviet Union also. The official index for metalworking grows only a little faster than that for all industry. 27/ If we can trust the Soviet gross value indexes this far, the omission should not seriously bias the index.

d. Spare parts of all kinds are missing. The Soviets have published a series on the ruble value of spare parts for tractor, agricultural machinery, and automotive equipment. This series rises from .15 billion rubles in 1950 to more than .5 billion in 1957, to .93 billion in 1959. The series rises considerably faster than all industry or even machinebuilding and is a substantial fraction of the value of the latter. However, we do not know enough about the coverage and construction of this series to have much confidence in it. It may represent only production in specialized factories. On the other hand, there is reason to believe that spare parts production has risen rapidly and that its omission from the index results in some understatement.

27. Official index for metalworking for 1955 was 209 (1950 = 100) and for industry 185.

6. Finally, the 1961 production data included in the index are preliminary. The USSR has not yet issued the 1961 volume of National Economy. Hence a number of our series are extrapolated on the basis of indirect indicators or previous trends.

We can not, of course, be sure what the effect of these omissions would be. However, consideration of the omitted products suggests that the calculated index is at least as likely to be understated as overstated on this account.

Armaments, which are specifically excluded, are undoubtedly of sufficient importance to alter significantly the trend of the index. Another missing element is production of hardware for the space program. This activity has graduated from the rare and exotic class into big business, and is perhaps the most rapidly growing activity in Soviet industry since 1955.

APPENDIX B

COMPARISON OF CALCULATED MACHINERY OUTPUT WITH SOVIET ANNOUNCED INVESTMENT IN EQUIPMENT

Since the main divergences and uncertainties of the calculated index center in the machinery field, we would like to find some test of reliability of the machinery series. The announced Soviet index of gross value of production of machinebuilding and metalworking grows even faster than the calculated machinery index, to 500 percent of 1950 in 1961 compared with 311 percent for the calculated index. We cannot, however, distinguish between divergences that arise from difference in coverage (the Soviet index includes armaments as well as other things missing from the calculated index) and those that arise from statistical malpractice in the Soviet index.

The limited coverage of the calculated machinery index is more comparable to the equipment portion of the Soviet investment index. This Soviet index is compared in Table 4 to the producer durables portion of the calculated index, that is, the machinery index of Table 1 minus consumer durables and both with and without electronics.

Table 4

Equipment Portion of Official Soviet Investment Index Compared to Calculated Civilian Machinery Index, With and Without Electronics
1950-1961
(billions of 1955 rubles)

Year	Equipment Portion of Official Soviet Investment Index		Calculated Civilian Machinery Index a/		
	Value	Index	Without Electronics Value	Without Electronics Index	With Electronics Index
1950	3.38	100.0	1.78	100.0	100.0
1951	3.48	103.0	1.70	95.5	97.5
1952	3.69	109.2	1.70	95.5	99.9
1953	3.89	115.1	1.96	110.1	115.9
1954	4.78	141.4	2.18	122.5	129.2
1955	5.64	166.9	2.47	138.8	147.3
1956	6.95	205.6	2.93	164.6	176.2
1957	7.62	225.4	3.40	191.0	206.5
1958	8.85	261.8	3.57	200.6	222.2
1959	9.61	284.3	3.74	210.1	236.8
1960	10.25	303.2	4.02	225.8	257.4
1961	11.00	325.4	4.37	245.5	287.6

a. Excluding consumer durables.

Since electronics includes items for military use, the series including it has too broad a coverage. On the other hand, the calculated series is a sample, while the Soviet index is comprehensive. On account of its coverage of unique items and new products, one would expect it to rise a little faster than the sample series. But in addition it is possible that the Soviet index is overstated on account of pricing of new products

and uncertain reporting. Finally, the investment index should show a time lag behind the production index. Allowing for these uncertainties we conclude the Soviet and calculated index provide some confirmation for each other.

APPENDIX C

Table 5
Data for Chart 2, Factors in Soviet Industrial Growth a/

	Index of Manhours in Industry b/ (1950=100)	Index of Capital Investment in Industry c/ (1950=100)	Index of Combined Metals Production d/ (1955=100)
1950	100	100	55.7
1951	—	112	64.5
1952	—	125	73.6
1953	116	137	81.2
1954	—	162	89.5
1955	124	181	100.0
1956	124	207	107.0
1957	127	218	113.1
1958	128	247	120.1
1959	129	284	129.8
1960	128	314	140.7
1961	129	329	152.6

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a. Civilian machinery excluding electronics in Chart 2, from Table 1 of this report.
b. [redacted] Soviet Industrial Productivity, October 1962. Paper contributed to the Joint Economic Committee.
c. Kapital'noye stroitel'stvo v SSSR, (Capital Construction in the USSR), Moscow, 1961.
d. Derived from data in Table 1 of this report.

Recent Trends in Soviet Personal Income and Consumption

30 October 1962

by

STATINTL [redacted]

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Recent Trends in Soviet Personal Income and Consumption

I. Introduction

As part of the examination of recent economic growth in the Soviet economy, this paper concerns itself with trends in real personal income and the several components of consumption. During the 1930's and 1940's consumption was awarded an extremely low priority. The primary concern of the Soviet planners was to train and maintain an effective labor force as cheaply as possible. Thus, only those resources essential for this purpose were allocated to consumption.

The low priority awarded consumption throughout this period stems only indirectly from Marxian ideology. Karl Marx, in his treatise Das Kapital, set forth a formula by which an economy which wishes to increase its rate of growth can best succeed. He explained that a nation, by increasing the share of its national product allocated to producer goods, and reducing the share allocated to consumer goods, can increase its rate of growth. Nevertheless, Marx did not indicate the criteria to be followed by a socialist economy in allocating its resources between producer and consumer goods, nor the appropriate speed and pattern for such a nation's economic development. Instead it was necessary for the Soviet government, the first nation to adopt Marx's political philosophy, to adjust this formula to its goals.

The formula adopted in 1928, the year in which the Soviet Union's first 5 Year Plan was initiated, placed primary emphasis on heavy industry as the most rapid road to economic development. Thereafter the needs of heavy industry were to assume highest priority. The results of this policy were

forced savings and a diversion of resources from consumption to investment channels. Furthermore, the increase in the share of national output going to investment was not primarily oriented towards the future production of consumer goods and services, but rather to the output of more investment goods. Thus since 1928, the most important production targets have been machine tools, steel, and chemicals, not textiles, shoes, and radios.

Illustrative of this policy was the fall of consumption, which represented 84 percent of GNP in 1928, to 60 percent of GNP by 1940, according to computations made by Professor Bergson.* 1/ During World War II, the proportion of GNP which was devoted to consumption continued to fall rapidly, reaching 40 percent in 1944. However, upon termination of the War, consumption as a share of GNP rose, reaching approximately 56 percent in 1950.**

Since the demise of Stalin in 1953, consumer welfare has been awarded a higher priority. However, this higher priority has not taken the form of a growing share of the national product, but rather a relatively constant share of a growing national product. For example, consumption as a share of GNP in 1955 was approximately 57 percent, or only slightly higher than in 1950, 2/ and while there is presently no published measure of consumption as a share of GNP (valued in factor costs) for the period since 1955, an independent calculation reveals that this share has probably declined somewhat.

* Both consumption and GNP are valued in 1937 ruble factor costs.

** It should be noted however, that even though consumption as a share of GNP might decline between two points in time, the increase in GNP during the period might be sufficient to enable consumption to be greater in the second period that in the first.

The shift in allocational policy probably did not represent signs of a benevolent dictatorship but rather an attempt by the Soviet leadership to adopt a policy more conducive to maximizing growth. Increases in labor productivity were to be obtained partly through effective economic incentives rather than through the harsh and oppressive measures used in the 1930's and 1940's.

In discussing consumption in the USSR, this paper will focus primarily on the period since 1955. Nevertheless, since the great improvement in the welfare of the Soviet consumer dates from approximately 1950, the events which occurred in the period 1950-55 will frequently be compared with what has happened since.

Despite the significant gains in per capita consumption of goods and services during the 1950's, in recent years agriculture and industry have failed to maintain the earlier growth rates in the output of food, fiber, and manufactured consumer goods. As a result, there has been a slowdown in the increments in available goods and services for consumption. Meanwhile disposable income received by the Soviet population has continued to increase rapidly. The growing disparity between the rates of increase in personal income and real goods and services has resulted in inflationary pressures. The government attempted to alleviate this situation somewhat by suspending the scheduled abolition of income taxes in September 1962. In addition, the increase in the prices of meat and butter in June 1962 has also helped to reduce inflationary pressures somewhat.

II. Personal Income and Consumption

The position of the consumer in the recent period of rapid Soviet growth can be evaluated by observing the trends in personal income and consumption. This paper, therefore, is devoted primarily to estimating these trends on the basis of the best available data.

Corresponding to US practice, personal income is defined in this paper to include both money income and income-in-kind. In contrast to the Soviet definition, it does not include the value of communal services provided by the State, for example, through its health and education systems. Money income in turn is comprised mostly of wages received for labor performed in the State sector or on collective farms,* transfer payments, and proceeds from the sale by individuals of consumer goods (mostly foodstuffs). Income-in-kind, an important share of personal income in the Soviet Union, is the value of commodities consumed by households for which no monetary payment is made. These products consist primarily of the unmarketed share of payments-in-kind received from the collective farm for labor services and those agricultural commodities produced from small private holdings in the form of gardens and livestock. Table 1 sets forth the relative importance of the different types of compensation for the Soviet population in 1955.**

* The wages of wage and salary workers come directly from state sources. In general the total wage of the individual worker is comprised of the basic wage, bonuses and premia and is nearly independent of the production performance of the enterprise. The collective farm on the other hand is nominally a cooperative form of enterprise. Persons participating in collective farm work earn "workdays" (trudodni) and their earnings per workday are directly related to the current income of the farm. Thus, collective farm workers are reimbursed after the collective farm has paid its taxes, insurance, contribution to the capital fund, and production and administrative expenses from the money revenue which it has earned from the sale of farm products. After these expenses are met, the remainder is available for distribution to the peasants, along with the produce set aside for this purpose. The cash and produce are paid to the participants in proportions determined by the number of "workdays" each earned during the year.

** A detailed report on the data in this paper is being prepared for publication elsewhere.

Table 1

Relative Share of Various Types of Personal Income
Received by the Population in 1955
(in percent)

Money Income	77
Wage Fund of Wage and Salary Workers in State Sector	48
Money Income Received by Collective Farmers from Wages and Income from Sale of Farm Products	9
Transfer Payments	7
Other a/	13
Income-In-Kind b/	23
Total Income	100

a. Includes cooperative artisans wages, income from the sale of farm products by workers and employees in the State sector, prisoners' wages, profits distributed to cooperative members, other urban labor income, and military pay (including subsistence).

b. Includes imputed rent, prisoner subsistence, farm household income-in-kind, and investment-in-kind.

Section III discusses the trends in real personal disposable income in the Soviet Union from 1950 to 1961. For an examination of trends in consumer welfare, personal income is converted to real personal disposable income by deducting direct taxes and net bond purchases and then deflating the residual by a price index of consumer goods and services. This price index is a weighted index combining several individual price indexes in a manner designed to approximate the changes in the cost of goods and services purchased by a Russian consumer in a base year.

The trends in the components of real consumption are discussed in Section IV. Real consumption is defined as the quantity of consumer goods and services valued in base year prices that the economy supplies to its members. In the Soviet Union real consumption consists of five basic categories (1) goods and services sold by the State retail trade network, (2) goods acquired by consumers in collective farm markets,* (3) purchases of services from municipal enterprises or artels, (4) that part of personal production on private plots or collective farm earnings-in-kind which is consumed rather than sold, and (5) the array of goods and services supplied to the population by the State free of direct charge. Section IV also contains a brief discussion of the qualitative changes in Soviet consumption and the problems the planners face in selecting the correct assortment of consumer goods and services to be offered to the Russian people.

Section V discusses the problem of recent inflation in the Soviet Union, and the steps which the government has taken to offset it.

* Collective farm markets are local retail food markets where collective farms and individuals are able to sell any surpluses remaining at their disposal after they have met their legal obligations to the Government and satisfied their own requirements. Prices on the collective farm markets, in contrast to prices in State controlled stores, fluctuate in response to the conditions of supply and demand. In 1961, food sales on the collective farm markets and in State controlled stores constituted 7 percent and 93 percent, respectively, of total sales of foodstuffs.

III. Trends in Real Personal Disposable Income, 1950-61

Real disposable income increased at a rapid rate from 1950 through 1955, but since 1955 the rate of increase has declined somewhat. In the periods 1951-55 and 1956-61 real personal disposable income (which represents disposable income deflated by an index of consumer prices) increased at the average annual rates of 8.7 percent and 6.1 percent, respectively, or on a per capita basis by 7.0 percent and 4.4 percent, respectively. Since personal disposable income depends on the behavior of money earnings, income-in-kind, transfer payments, and the extent of deductions from money income in the form of direct taxes and compulsory purchase, the varying trends in these components are discussed below.

Table 2

Average Annual Rates of Growth of Real Personal Disposable Income, 1950-61
(in percent)

	1951-55	1956-61	1956-58	1959-61
Total a/	8.7	6.1	6.1	6.0
Per Capita b/	7.0	4.4	4.3	4.7

a. The index of real personal disposable income was obtained by estimating personal disposable income in 1950, 1955-61 and deflating it by a price index of goods and services. Estimates of the components of personal disposable income employed in the construction of the index were obtained or derived from official statements contained in the Soviet press or publications and from research performed by Western students of the Soviet economy. The weights for the index of the cost of goods and services to households were obtained by estimating purchases by households in 1958 of (1) goods purchased in State and cooperative stores, (2) services, excluding housing, (3) housing, and (4) collective farm market sales. The price indexes to which these weights were assigned were estimated from official sources and from previous research on the Soviet economy performed in the West.

b. Based on unpublished estimates of population of the US Bureau of the Census, Foreign Manpower Office.

A. Gross Earnings of Wage and Salary Workers

The gross earnings of wage and salary workers in the State sector increased at the average annual rate of 7.9 percent in the period 1955-61.* Workers' wages grew by an annual average of 2.9 percent, while the labor force increased at the average annual rate of 4.6 percent.**

It has often been observed in modern industrial economies that over time wage differentials tend to narrow. Under conditions of market competition for labor, one would expect a rather continuous decrease in wage differentials in the rapidly growing Soviet economy. But as is characteristic of a State directed economy such as that of the USSR, relative wages tend to be rigid in the short run with large changes introduced from time to time. According to Soviet literature, it would appear that such a change in the structure of relative wages has recently been initiated in the Soviet Union, the first significant change since the 1930's. For example, in 1957, the minimum wage rates (stavki) for all wage and salary workers in State enterprises and budgetary organizations were raised by about one-third to 27 to 35 rubles per month.*** 3/ An independent calculation reveals that this adjustment affected more than 12 percent of the workers employed in the state sector.****

* Includes wages of cooperative artisans in both 1955 and 1961, although cooperative artisans did not become part of the State labor force until 1960.

** A portion of the expansion of the State labor force represents the transfer of workers from collective farms to State enterprises.

*** Ruble values in this report are given in new rubles established by the Soviet currency reform of 1 January 1961. A nominal rate of exchange based on the gold content of the respective currencies is 0.90 ruble to US $1. This rate, however, should not be interpreted as an estimate of the equivalent dollar value of similar US goods and services.

**** In addition to the minimum wage which a worker would be able to earn, he might receive an additional 15 to 25 percent in the form of bonuses and other types of incentive pay. Thus although prior to the increase in the minimum wage, a worker's total earnings might be more than 27 to 35 rubles per month, if his base pay (stavki) was less than this amount, he would be allotted a supplement to bring his base pay (not total earnings) up to the minimum amount.

In 1962, minimum wage rates are scheduled to be increased to 40 to 45 rubles per month, while in 1963-65, they are to jump to 50 to 60 rubles. 4/ However, research indicates that the new minimum wage levels installed in 1962 represent little more than an institutionalization of the earnings levels of the lowest paid workers before the wage adjustment. 5/

Similarly, a major wage reform was to be accomplished during 1956-62. According to official sources, the average wages received by workers in the State sector were to increase by 10 to 20 percent, while the wages of lower paid workers were to increase by 30 to 35 percent. 6/ This action was to be accomplished partly by reducing the pay differential between the highest and lowest grades. For example, a 6 step pay scale for wage workers (instead of an 8 step pay scale) was introduced in most industries. The ratio between the first and 6th step was set at approximately 2:1, rather than the 3.5 to 2.5:1 which existed just prior to the wage reform. 7/ Together with the change in the structure of workers' wages, the salaries of engineers and other technicians were also raised, but by less than the relative increase in the wages of workers. Nevertheless, Walter Galenson has demonstrated that these Soviet comparisons are spurious, and that no sharp reduction in differentials actually took place because there were almost no wage workers in the first 2 grades of the wage scales. 8/ Thus, one should actually have compared the dispersion between the 3rd step and the 8th step in the old scale with the dispersion between the 1st step and the 6th step in the new wage scale. The new extreme ratios in the various industries correspond roughly to the extreme ratios which were in existence prior to the wage reform. Not only were the "actual" extreme ratios relatively unchanged by the wage adjustment, but the distribution of workers by "actual" wage grades was also not altered significantly. 9/

One important result of the wage reform was the increase in the portion of an employee's total earnings which he receives in the form of base pay. While base pay constituted approximately 45 to 55 percent of total earnings prior to the wage reform, it is presently believed to constitute 75 to 85 percent.10/ Because the higher and middle paid workers' compensation was often based on a piece rate scale and included proportionally greater amounts of bonuses and premia than did the pay of certain lower paid (and less skilled) coworkers who paid on a straight time basis, the change in the wage structure, which will make it more difficult for a worker to earn bonuses and premia, is expected to reduce the disparity in rates between the various classes of workers.* However, the actual effect of this action on reducing the disparity between income groups is expected to be only slight because the number of lower paid workers who are paid on a straight time basis is relatively small, probably constituting less than 10 percent of all industrial production personnel. It would thus appear that the recent Soviet attempt to improve the system of wage payments and to reduce wage differentials has not changed earnings differentials significantly.

B. Money Income of Collective Farmers

The peasant population in households attached to collective farms has two primary sources of money income: (1) the remuneration for labor services expended on the collective farm and (2) money income from the sale of farm

* The wage reform not only increased a worker's base pay, but also the amount of work it was necessary to perform in order to receive that base pay. In so doing, it became increasingly more difficult for a worker to earn bonuses and premia by overfulfilling his goals.

products. The total money income of the collective farm population from farming activity increased by 44 percent from 1955 to 1961 as the result of a 90 percent increase in money income received from the collective farm and a 10 percent increase in earnings from the sale of farm products.

Much of the increase in money income from participating in collective farm activity can be explained by the change in the manner in which the collective farm labor force was compensated for its work. Over the past decade official policy recommended that the compensation of the collective farmers be, wherever possible, in the form of cash payments rather than payments-in-kind. The effect of the new policy can be seen by the fact that in 1955 the portion of the total income paid out by collective farms in the form of cash for services rendered was 42 percent, but by 1960 had increased to 68 percent.*11/ Thus the 90 percent increase in the wages paid to farmers represents not only an increase in the amount which these workers received for a day's labor, but also represents a payment in lieu of the portion of the payments-in-kind which they no longer received under the new compensation arrangement.

Money income from the sale of farm products by the collective farm population comes from the sale of products either obtained from their "own enterprises" -- land allotment and livestock held by the household -- or from the sale of products obtained from the collective farm as in-kind payments. These sales now provide about 50 percent of the collective farmers' money income from farming activity.

* These shares are based on an official calculation which values payments-in-kind in State retail prices.

Great disparities exist in income distributed not only within each collective farm, but also among the various collective farms. It has been estimated that farm mechanizers (tractor drivers, combine operators, etc.), who comprise about 10 percent of the labor force on collective farms, receive about 20 to 25 percent of the income distributed from the farms. 12/ Workers on model farms and on those farms which produce high priced crops, primarily industrial crops, are also in a favored status in relation to other farms. According to the calculations performed by Arcadius Kahan, "about 20 percent of the collective farm population absorbs 40-45 percent of the total labor remuneration distributed by the collective farms." 13/ Since the lower paid workers on the majority of collective farms receive a relatively small portion of the collective farms' total income, the output from their small private holdings of land and livestock represents an important supplement to their income.* Recently the Government has attempted to reduce the size of these "own enterprises" attached to the households of collective farmers. Thus, by reducing the importance of the private sector, the Government is, in effect, tending to widen the differences in income within the collective farm labor force.

* Although all households attached to collective farms maintain "own enterprises" the importance of these plots in the total income of higher paid workers and agricultural specialists is much less than for the lower paid workers.

C. Income-in-Kind

Income-in-kind represents the imputed value of agricultural produce consumed directly without a monetary transaction. This value is comprised of the unmarketed portion of commodities (1) received by collective farmers as payment for the services which they render on the collective farms, and (2) produced by households (both urban and rural) on their small holdings of land and livestock. Since this production is consumed by households without passing through the normal trade channels, it is not included in data on sales transactions. Income-in-kind constitutes a significant proportion of the total income in the Soviet Union. This is especially true of lower and middle income groups. As mentioned above, there are significant variations in the money income received by collective farmers. As a result, persons in the lower paid categories such as milkmaids, shepherds, etc., rely heavily on the production from their private plots to compensate for their lower money earnings.

In the period 1956-61, income-in-kind increased at the average annual rate of 1.9 percent, or somewhat less than the average annual increase of 2.4 percent registered in the period 1951-55. However, since 1958, income-in-kind has declined by approximately 2 percent.

The relatively small increase in income-in-kind compared to the increase in the other components of personal income, during the 1950's, was a result of two official policies: (1) the form of remuneration to collective farmers for work on the collective farm was steadily changed from that of in-kind payments (grain, potatoes, etc.) to cash payments; and (2) after a period of relaxation in the mid 1950's in policy towards the private sector, measures were taken after 1958 to restrict the size of the agricultural holdings of

D. Transfer Payments

During the period 1956-61, transfer payments increased at the average annual rate of 14.3 percent. This sharp rise is explained largely by the 1956 revision in the pension laws and the increase in the number of persons receiving such pensions. Prior to 1956, the maximum old age pension was 20 rubles per month.* 14/ However, with the revision of the pension laws, the minimum rate was set at 30 rubles per month.** In addition, a new scale of payments benefiting lower paid workers was instituted. (See Table 3). Persons earning up to 35 rubles per month would receive pensions amounting to 100 percent of their earnings, with progressively smaller percentages granted to those with high earnings. As a result of these revisions, the average pension in 1961 was approximately 2.5 times the average in 1955. 15/

Other transfer payments received by individuals from the State include sickness benefits, maternity leave, and grants and stipends. Although no recent changes have been made in rates of payment, overall expenditures for these purposes have increased as a result of increases in the total numbers of persons receiving such payments and in the increase in the average wage.

* Persons in certain favored occupations were exempt from this requirement.

** Further increases in minimum old age pension payments are to be made in 1963 and 1966.

Table 3

Share of Wages Received by Wage and Salary Workers as Retirement Benefits a/

Monthly Wage (rubles)	Percent of Wages Received as Pension Payments b/
Up to 35	100
35 - 50	85
50 - 60	75
60 - 80	65
80 - 100	55
100 and more c/	50

a. USSR. GIPL. Na Blago i Schast'e Naroda: Sbornik Dokumentov (For the Welfare and Happiness of the People: Collection of Documents), Moscow, 1961, p. 164.

b. Received by all wage and salary workers except those engaged in underground work, and in harmful, dangerous or arduous occupations.

c. With certain exceptions, the maximum rate was set at 120 rubles per month.

Sick pay and maternity leave payments are made on a graduated scale of payments which is based on length of service. Persons who are injured at work or suffer from diseases incurred on their jobs are entitled to 100 percent of their earnings regardless of the length of service. Since 1960, a worker who voluntarily leaves his job for another, is entitled to sick pay for ordinary illness on his new job if he finds work within 1 month.* Although maternity benefits in the past several years have not been changed, the period of paid maternity leave was extended in 1956 from 70 days to 112 days.

* Certain people are exempt from this provision.

E. Direct Taxes and Compulsory Bond Purchases

Disposable income was also increased between 1955 and 1961 by the reduction or elimination of direct taxes on certain income groups and the suspension of compulsory bond purchases. In 1957-58, persons earning 37 rubles per month or less were relieved of their tax obligations, while the burden of taxation on those earning between 37.1 and 45 rubles per month was reduced. 16/ As a result, approximately 1.3 billion rubles was added to the purchasing power of the population. 17/ More significant was the announcement by the Supreme Soviet in 1960 of the gradual abolition of the income tax, which by 1965, was expected to add a total of 7.4 billion rubles to the population's disposable income.* 18/ (See Table 4)

However, in September 1962, the Government decided to postpone further tax cuts. While not affecting these persons in the lower income groups whose taxes had already been eliminated or reduced, the September announcement curtailed the growth in disposable incomes and the inflationary pressures which this growth was exerting.

An additional factor in the explanation of the rise in disposable income was the suspension of compulsory bond purchases in 1958. As a result, bond purchases dropped from 2.5 billion rubles in 1955 to 0.3 billion rubles in 1958, and thereafter declined to an insignificant level.

* In 1960, approximately 7 percent of an individual's gross income was expended for taxes.

Table 4

Time Schedule for the "Abolition" of Income Tax for Wage and Salary Workers, 1960-65 a/

	Oct. 1960	Oct. 1961	Oct. 1962	Oct. 1963	Oct. 1964	Oct. 1965
Persons earning the following or less per month are not required to pay income tax as of the following dates	(in rubles) 50	60	70	--	--	
Range of monthly earnings on which tax to be adjusted downward on an average of 40 percent	50.1-60	60.1-70	70.1-80	70.1-90	70.1-100	Full abolition of income tax b/
Expected annual increase in aggregate disposable income during the year	(in millions of rubles) 360	400	450	240	240	(5,710) c/

a. USSR. SSSR-USHA: Tsifrakh i Fakti (USSR-USA: Figures and Facts), Moscow, 1961, p. 101.

b. By 1966 persons earning up to 100 rubles per month would have been entirely relieved of taxation, while those earning between 100-200 rubles per month would have had their base pay adjusted downward by a portion of the tax originally imposed on their incomes. Workers who earned more than 200 rubles a month would have had their pay adjusted downward by the complete amount of the tax that had been collected on their pay prior to the "abolition" of the tax.

c. Difference between total increases in disposable income from tax deductions of 7.4 billion rubles and sum of reductions for previous five years, 1960-64.

IV. Recent Trends in Consumption

The previous section was concerned with real personal income in the Soviet Union in the period 1950-61. In this section attention will be focused on how the disposable income (excluding in-kind payments) received during this period has been spent on consumer goods and services. The discussion of trends in personal consumption expenditures is supplemented by a discussion of trends in communal consumption. Communal consumption includes the value of health, education, and other social services supplied by government institutions to the population free of direct charge. Viewed as an aggregate of total consumption, personal consumption expenditures comprise about 90 percent, and communal consumption about 10 percent of the total. The rates of growth of the several components of consumption since 1950 are shown in Table 5.

Table 5

Average Annual Per Capita Rates of Growth of Components of Consumption
(in percent)

	1951-55	1956-61	1956-68	1959-61
Food goods a/	4.5	2.9	2.7	3.1
Nonfood goods b/	10.8	6.9	7.8	5.9
Soft goods c/	8.4	4.3	5.1	3.5
Consumer durables d/	29.1	11.9	12.8	11.0
Services to households e/	5.8	5.9	5.4	6.3
Communal services f/	3.0	3.9	3.2	4.6

a. The index of growth in the consumption of foodstuffs was estimated as follows:

1. Estimates were made of Soviet output of 25 representative food products in three categories -- basic foods (flour, potatoes, vegetables), animal products, and processed foods.

2. The production data were adjusted to exclude waste, losses, seed, and animal feed, and were further adjusted to reflect net imports and inventory changes when more than 5 percent of total production was involved.

3. In order to eliminate double-counting of products at different stages of production, some of the basic foods and animal products series were modified accordingly. For example, the milk required to produce canned milk, butter, [illegible] was eliminated from the fluid milk series.

4. These physical estimates of human consumption of various food products over time were then combined into one aggregate series. The weight of each individual series in the aggregate index for the consumption of foodstuffs is the proportion of its 1955 value (physical consumption priced in 1955 state store prices) to the total value of the sample.

b. The index of consumption of non-food goods is obtained by (1) deducting from officially reported state and cooperative retail sales of non-food goods estimates of household purchases on non-food goods for non-consumption purposes, household purchases of personal and repair services and communist party literature, and retail purchases by institutions, enterprises, and collective farms; (2) adding estimates of purchases on the non-food portion of subsistence by military and internal security forces; (3) deflating the total of (1) and (2) by the official index of state and cooperative retail prices for non-food goods.

c. The index for growth in consumption of soft goods is based on the following procedure: (1) retail sales in 1955 are obtained for four categories of textiles and for sewn garments, knitted wear, hosiery, and leather footwear; (2) these 1955 values are moved over time by production indexes based on official data. Since the production data have not been adjusted for net imports, changes in composition, or for inventory changes, the value series are not precise indications of the trends in consumption of these products in constant prices; (3) the summation of the individual value series provides the basis for the over-all index for the consumption of soft goods.

d. In constructing an index for the consumption of durable goods the procedure used to calculate an index for soft goods (c, above) was adopted. Again retail sales in 1955 serve as base year weights. The sample of durable goods includes furniture, bicycles and motorcycles, radio and television sets, watches and clocks, electrical appliances, sewing machines, cameras, and kerosene burners.

e. Services reflected in the index of purchases of services by consumers include household utilities, transportation, recreation and sports, religion, personal and repair services, and housing services. The majority of services were valued by multiplying estimates of the physical quantity purchased by 1958 prices. In some cases, they were estimated partly or entirely from official data on sales of these services in current prices and then deflated by price indexes based on 1958. The over-all index is computed from the aggregate value of these services in 1958 prices. The index of housing services is simply an index of total housing stock measured in M^2 of living space.

f. The index of communal services is based on the trend in the total value of health and educational services as estimated from state budget data and collective farm and state enterprise expenditures. Expenditures on capital investment were deducted as was also the wage component. The residual series, or the expenditures on goods and services by the health and education sector, was converted to 1957 rubles by the use of an index of state store prices, excluding alcoholic beverages. The wage bill was estimated by moving the 1957 value through time by an index of the number of workers and employees engaged in health care and education. The sum of the deflated expenditures on goods and services and the wage bill series serves as the index of the state's

A. Consumption of Foodstuffs

In the period 1956-61, the value of per capita consumption of foodstuffs increased at the average annual rate of 2.9 percent, or substantially less than the average annual per capita rate of 4.5 percent in the period 1951-55.

There has been a substantial improvement in the Soviet diet since the death of Stalin. One indication of this improvement is the decline in the "starchy-staple ratio," i.e. the percentage of total calories ingested that are derived from grains and potatoes. The "starchy-staple ratio" generally reflects the relative level of real personal income of a country's population. The presence of a low ratio usually indicates that the population's income is high enough to allow the substitution of relatively expensive foods such as meat and dairy products for the cheaper starchy staples. For example, traditionally as consumers' real disposable incomes rise, animal products, oils, fats, sugar and other "quality" foods tend to be substituted for the basic staples. At the same time the total quantity of food ingested -- both in physical weight and calories -- may remain relatively stable. The substitution of higher quality foods for the basic foods causes this ratio to fall.

In 1953, approximately 75 percent of the calories consumed in the USSR were derived from low quality starchy foods, while only 10 percent were derived from animal products -- meat, dairy products and eggs. By 1960, the proportion of per capita caloric intake from starchy foods had dropped to 65 percent, while the proportion contributed by animal products had increased to 17 percent. In the case of the Soviet Union, where real consumer disposable

income has been rising steadily, one would expect the "starchy-staple ratio" to continue to decline. Instead, since 1960 there has been a general leveling off in the improvement of the Soviet diet. This has been due not to the satisfaction of the Soviet consumer with his diet, but rather to the inability of the agricultural sector to keep pace with the increase in the demand for higher quality foodstuffs. Evidence of the population's unsatisfied demand for high quality foodstuffs, particularly for animal products, has been the rise in collective farm market prices, reports of civil disturbances due to shortages, and the State store price increases on meat and butter of 30 and 25 percent, respectively, in June 1962. Nevertheless, Khrushchev, at the 22nd Party Congress implied that by 1970 the "starchy-staple ratio" would decline to about 28 percent, or to the level which prevailed in the US in 1948-49. 19/ As indicated in the paper in this series concerned with agricultural production, such claims are viewed by Western students of the Soviet economy with considerable skepticism, if not outright disbelief.

While improving the quality of their diet, the Soviet consumers have also been able to reduce the share of their total income spend on foodstuffs. For example, in 1950, approximately 60 percent of total disposable income was spent on foodstuffs. By 1960, this figure had declined to approximately 55 percent. In addition, during this period the proportion of foodstuffs purchased in State stores had increased from approximately 45 percent to approximately 60 percent, while the share derived from collective farm markets and private production has declined proportionately. This trend is expected to continue throughout the next 20 years.

B. Consumption of Nonfood Goods

In the period 1956-61, per capita consumption of nonfood goods increased at the average annual rate of 6.9 percent, which was substantially less than the average annual per capita rate of growth registered in the period 1951-55. While the average annual per capita rates of growth of both soft goods and consumer durables in the period 1956-61 was approximately half of the increase achieved in 1951-55, the more rapid growth of consumer durables throughout the period tended to produce a continuing shift in the composition of nonfood consumption. For example, in 1952, approximately one-fourth of consumer expenditures on nonfood goods were for consumer durables, 20/ but by 1961, this figure had increased to approximately one-third. 21/

Since 1955, there have been growing indications of consumer resistance to the nonfood goods which were being manufactured in State enterprises. In recent years the most graphic evidence has come from the size of unsold inventories in the hands of the retail and wholesale networks. In 1961, total inventories of nonfood goods were100 percent above 1955, while retail sales were only 60 percent above. 22/ That this increase in inventories is attributed partially to unsaleable goods (at present prices) is suggested by the heavy press commentary concerning the poor quality of soft goods and consumer durables and the lack of a more suitable assortment.

In response to the growing signs of consumer dissatisfaction, the State ordered the production managers to manufacture better and more attractive goods and strengthened the position of trade officials in deciding whether

to accept or reject shipments of consumer goods. The increased authority granted to the trade officials has not yet resulted in any substantial improvement in the consumers' position.

The difficulties of bringing consumption and production into equilibrium are numerous. In the Soviet Union both production and prices react only sluggishly, if at all, to the forces of demand, so that the conflict between consumers' and planners' preferences results in the piling up of some goods on the shelves at the same time as there are long waiting lists for certain other products. Since most of the trade officials have received their training and experience in an economy in which buyers were willing to purchase any goods available, they have had little experience or training in estimating or anticipating consumers demands.

To reduce inventories, credit purchases were introduced in 1959, for goods in relatively ample supply. The terms for such purchases were relatively liberal: 25 percent of the purchase price was required as a down payment, with six months to one year in which to pay the balance. The effective rate of interest on the credit received was 1 to 2 percent per year. 23/ But in 1961, such sales constituted slightly more than 1 percent of total retail sales. 24/

1. Soft Goods

In the period 1951-55, the per capita availability of soft goods, as measured by weighted production indexes, increased at the average annual rate of 8.4 percent.* However, in the period since 1955, it has increased

* A volume index of soft goods and consumer durables was constructed for the USSR in the period 1950-61, with 1955 retail sales used as value weights.

Table 6

Per Capita Consumption of Soft Goods in the USSR and the US

	Unit of Measurement	USSR 1952 a/	USSR 1960 b/	US 1959 c/
Textiles, total	m^2	20 c/	26	70 c/
of which:				
Cotton	m^2	17	19	52
Wool	m^2	1.3	2.2	2.7
Silk and artificial fabrics	m^2	0.7	3.4	15
Linen	m^2	1.2	1.3	negligible
Knitted wear	pieces	1.6	2.9	11 d/
Stockings, hose	pairs	3.1	4.5 e/	10 f/
Leather shoes	pairs	1.3	1.8	3.4 g/

a. Estimated apparent consumption based on production estimates in USSR. TSU, Narodnoye Khozyaystvo v SSSR v 1958 Godu (The National Economy of the USSR in 1958), Moscow, 1959, several pages, and USSR. TSU. Sovetskaya Torgovlya (Soviet Trade), Moscow, 1956, pp. 82, 90. 131.

b. Tyukov, V. "Sovetskaya Torgovlya v Period Razvertnutovo Stroitel'stva Kommunisma" (Sovet Trade in the Period of the Development of Communism), Planovoye Khozyaystvo, No. 11, Nov 1961, p. 44.

c. All figures rounded to two significant digits.

d. Erro, I. "Catching Up and Outstripping: An Appraisal," Problems of Communism, Vol X, No. IV, Jul-Aug 1961, p. 25.

e. Aganbegyan, A. "Uroven' Zhizni Trudyashchikhsya v SSSR i v UShA" (The Standard of Living in the USSR and the USA) Mirovaya Ekonomika i Mezhdunarodnyye Otnosheniya, p. 35. The figure is for 1959.

f. Erro, op. cit. p. 27. Estimate of 1960 per capita production.

g. Ibid., p. 25.

at only 4.3 percent per year. Investigation of a shorter time period reveals that the growth of soft goods production has continued to decline. For example, in the period 1959-61, the average annual increase in the production of soft goods dropped to 3.5 percent.

Despite its slowdown, there have been important structural changes in the consumption of soft goods since the early 1950's. For example, of total sales of textiles in 1952, about 64 percent were of cotton, and 16 percent of silklike fabrics (mostly rayon goods), 25/ while, by 1961, the proportion of cotton to the total had dropped to 39 percent and the proportion of silklike fabrics had climbed to 29 percent. 26/ Although such a shift would seem to represent a sharp improvement in the quality of the fabrics consumed by the Soviet people, the paper in this series dealing with consumer goods' production tends to discredit such a conclusion.

In addition to the change in the structure of textile consumption, the proportion going directly into ready-made garments increased, while the share of textiles which was purchased by consumers in State stores, and custom processed into garments either at home, by seamstresses, or artels, declined.

The increased demand for higher quality merchandise also affected the consumption pattern for footwear. Whereas in 1952, only about 57 percent of the total sales of footwear represented the sale of leather shoes 27/, by 1961, purchases of leather shoes comprised approximately 74 percent of total sales of footwear. 28/

2. Consumer Durables

Although during the decade of the 1950's, production of consumer durables increased at an extremely rapid rate, the stock of consumer durables in the USSR in 1960 was still extremely low. Data have been published on the

stocks in households of certain durable goods in 1960, and these are reproduced in Table 7 together with the available estimates of 1960 US stocks of the same goods. It should be noted, however, that Soviet and US stocks of consumer durables are not strictly comparable due to the poorer quality of Soviet goods and to the fact that the Soviet models differ substantially from their American counterpart. For a discussion of the quality of Soviet durable goods, see the paper in this series by Erro.

Table 7

Stocks of Consumer Durables per 100 Families in the USSR and the US

Name of Product	USSR 1960 a/	US 1960 b/
Radio equipment	48	94
Television	10	89
Cameras and photographic equipment	17	N.A.
Watches and clocks	263	N.A.
Refrigerators	3.5	98 c/
Sewing machines	35	N.A.
Washing machines	5 d/	95
Two-wheeled modes of transportation	45	N.A.

a. Tyukov, V. "Sovetskaya Torgovlya v Period Razvernutovo Stroitel'stva Kommunisma" (Soviet Trade in the Period of the Development of Communism), Planovoye Khozyaystvo, No. 11, Nov. 1961, p. 44. These figures exclude rental equipment.
b. Commerce, Bureau of the Census, Statistical Abstract of the United States 1961, Washington, 1961, p. 821. Based on 51,690,000 potential users except for radios where potential users are 53,300,000.
c. Electric refrigerators only.
d. Lokshin, R. "Narodnoye Potrebleniye i Torgovlya Dvadsatiletke" (National Consumption and Trade in 20 years) Sovetskoye Torgovlya, No. 11, Nov 1961, p. 10.

C. Services

Household expenditures for utilities (heat, gas, electricity, telephone, etc.), transportation, recreation and sports, religion, personal care and repair services, and housing are estimated to have increased at the average annual per capita rate of 5.9 percent during the period 1956-61, which was slightly more than the average annual increase of 5.8 percent registered in the period 1951-55.

The notable laggard in the service sector has been in housing. Although the urban housing stock (measured in terms of living space*) increased by 95 percent from 1950 to 1961, there has been only a 6 percent increase in the rural housing stock. Adjusting the urban housing stock for population changes, the per capita increase in living space

Table 8

Average Annual Rates of Growth of Urban and Rural Living Space
(percent)

	1951-55	1956-61	1956-58	1959-61
Urban housing	4.4	7.9	7.5	8.3
Public	4.9	6.2	5.1	7.1
Private	3.6	10.2	10.5	9.8
Rural housing	0	1.0	1.0	1.0
Urban housing, per capita	0.4	3.7	3.0	4.4
Rural housing, per capita	0	1.4	1.2	1.7

* In the Soviet Union, living space is defined to include dining rooms, living rooms, bedrooms, but does not include bathrooms, kitchens, hallways, and corridors. Approximately 73 percent of the total urban housing stock is estimated as living space.

during this same period of time was only 28 percent. The decline in the rural population coupled with the 6 percent increase in housing stock resulted in an 8 percent increase in per capita rural housing.

The big spurt in urban housing (increasing the stock by 33 percent) occurred in the period 1957-60. In 1957, the government pledged to "overcome the housing shortage" in 10 to 12 years, and took the necessary steps to increase housing construction between 1957 and 1960. In addition to allocating additional funds for State housing, the goals for private urban housing were increased by 33 percent.

To facilitate the fulfillment of the goals for private housing construction, the government made building lots available and encouraged local enterprises to help private builders obtain materials and even urged them to provide trucks for the purpose of hauling the materials. As a result of the regime's attitude, substantial increases in the construction of private housing took place between 1957-60. Since then, however, the increase in State investment in housing has slowed and private home construction has begun to falter because of a reversal in 1959 in the government's policy toward private home building. Not only has credit been tightened in certain regions, but the number of building lots and supplies of building materials made available for that purpose have been restricted.

Although there has been a rapid spurt in home building in the last several years, the Soviet housing stock is still woefully inadequate. For example, in 1961, per capita living space in urban areas was only 71 square feet, while in rural areas it was even less - 66 square feet.

This compares with an estimate of approximately 300 square feet per capita in the US in the same period. In addition, after years of neglect and under-maintenance, the condition of the Soviet housing stock is extremely poor.

D. Communal Consumption

Communal consumption includes the value of health, education, and other social services supplied by the government, collective farms, and other enterprises to the population free of direct charge. Included are the conventional services associated with health care such as doctor's services; the upkeep of clinics, hospitals, rest homes and sanitoria; public health measures; etc.

The expenditures for education, which are included in the definition of communal services, consist not only of expenditures for schools, but also expenditures for libraries, museums, parks, and other cultural and recreational activities. Although the Soviet concept of communal services includes expenditures on scientific research, these costs have been excluded in the concept of communal services as defined in this paper.

In the period 1956-61, consumption through communal services increased at the average annual per capita rate of 3.9 percent, with an increase of 4.6 percent in the period since 1958. This compares favorably with the average annual per capita increase of 3.0 percent between 1951-55.

Since 1955, expenditures for health care have increased at a considerably faster rate than expenditures for education. Expenditures in health have increased at the average annual per capita rate of 5.0 percent.

while expenditures on education (excluding scientific research) have increased at the average annual per capita rate of 3.1 percent.

In the period 1956-61, communal consumption increased more slowly than personal consumption.

V. The Problem of the Recent Inflation

As indicated above, since 1950, real consumer disposable income has increased at a rapid rate. Until recently, the State has provided (at given prices) a sufficient quantity of goods and services to absorb the growth in purchasing power. However, evidence has recently become available of a growing disparity between the rates of increase in money income and of real consumption of goods and services. The imbalance between the supply of goods and services and consumer purchasing power, which Khrushchev has called". . . a situation fraught with dangerous consequences," is the basis of his immediate problem with the consumer.

Because the regime has had a consistent policy of not raising prices in retail stores, the resulting inflationary pressures took the form of long waiting lists for consumer durables, growing queues for certain nonfood goods in State outlets, rising prices in the collective farm markets, and a growth in unplanned savings on the part of the consumers. In the face of this inflationary gap and the dim prospects for future acceleration of production for consumer purposes, a 30 percent increase in the average price of meat and meat products and a 25 percent increase in the price of butter was put into effect in State stores on 1 June 1962. The purpose of these price increases was to bring supply and demand in State controlled outlets for these two commodities closer to equilibrium and at the same time to reduce purchasing power held by the population. As Khrushchev explained in a speech to Cuban students on June 3rd,". . . . .we have run into difficulties caused by the fact that our people now have more money than there are goods being turned out by our industry and agriculture." 29 / Apparently the

reaction of the urban population to these large price increases was rather violent in certain urban centers. A series of protest rallies and riots caused dozens and possibly hundreds of deaths, necessitating the use of Soviet army units to quell the disturbances. 30/ In an attempt to increase the supply of those products which were in greatest demand, and thus reduce inflationary pressures, the government also announced in June 1962 an average increase of 35 percent in the price it would pay to individuals and collective farms for the meat it purchases.

Apparently the steps taken in June 1962 to reduce or prevent the expansion of inflationary pressures on the economy were insufficient, for on September 24th the government announced the postponement of the scheduled abolition of the income tax. However whether the recent price adjustment and the postponement of the tax cut will successfully curtail its growth remains to be seen. At the time of this writing, it appears highly unlikely that substantial resources will be allocated to the consumer sector in an effort to ease the inflationary pressure.

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